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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/867,434	05/31/2001	Ronald K. Anderson	AND002-010D1	8057

7590

08/11/2004

DIEDERIKS & WHITELAW, PLC
12471 Dillingham Square, #301
Woodbridge, VA 22192

EXAMINER

LEE, EDMUND H

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/867,434	ANDERSON ET AL.	
	Examiner	Art Unit	
	EDMUND H. LEE	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/31/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 16-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Streltsov (USPN 37287990 in view of Plante (USPN 4842742). In regard to claim 1, Streltsov teaches a method of thermoforming a sheet of material (figs 1-3); providing a sheet of plastic material (figs 1-3); arranging the sheet of material with other sheets of similar material (figs 1-3)--as a note, the stack of material is exposed to open air thus it is permitted to cool; transferring the sheet to a temperature control unit (figs 1-3); directing a temperature controlled fluid medium onto opposing side surfaces of the sheet within the temperature control unit to establish a substantially uniform temperature across the sheet (col 2, lns 63-65; figs 1-3); delivering the sheet to a thermoforming device for creating the molded article (figs 1-3). Streltsov, however, does not teach forming an appliance liner; and extruding the sheet. Plante teaches extruding a sheet from a plastic material and thermoforming the sheet to form an appliance liner (figs 3-11). Streltsov and Plante are combinable because they are analogous with respect to thermoforming large articles from a heated sheet of material. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use extruded sheets as taught by Plante in the process of

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Streltsov in order to form appliance liners as taught by Plante in order to efficiently form liners without thin spots or whitening. In regard to claims 17-26, Streltsov teaches using compressed air as a fluid medium for heating the sheet (figs 1-3); and developing a flow of air as the fluid medium through the use of at least one blower which directs the flow of air into a manifold assembly (figs 1-3). Streltsov does not teach creating a temperature differential across the entire sheet of less than 5F; delivering the fluid medium through a manifold assembly unto the opposing side surfaces of the sheet, and recirculating the fluid medium through the manifold assembly; developing a flow of air through the use of first and second blowers with each blower having the claimed air flow rate; operating at the claimed static pressure range; extruding the sheet to the claimed thickness and creating a liner having the claimed depth; providing nozzles at the claimed distance from the opposing side surfaces; sensing operating parameters of the temperature control unit, and regulating the unit based on the sensed operating parameters; heating the sheet to the claimed temperature; controlling an amount of heat added to the air by varying an operating speed of the blower unit; and regulating the position of a damper unit to control an introduced amount of ambient air into the manifold assembly. In regard to creating a temperature differential across the entire sheet of less than 5F, preform temperature is well-known in the molding art as an important molding parameter and the desired temperature would have been obviously and readily determined through routine experimentation by one having ordinary skill in the art at the time the invention was made. Further, the claimed temperature differential is generally well-known

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in the molding art and it would have been obvious to one of ordinary skill in the art at the time the invention was made to create the claimed temperature differential in the process of Streltsov in order to ensure no thinning or whitening. In regard to delivering the fluid medium through a manifold assembly unto the opposing side surfaces of the sheet, and recirculating the fluid medium through the manifold assembly, such is well-known in the molding art in order to reduce molding costs. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to deliver the medium of Streltsov onto opposing sides of the sheet of Streltsov and to recirculate the medium in order to reduce cycle time and molding costs. In regard to developing a flow of air through the use of first and second blowers with each blower having the claimed air flow rate, air flow rate of heating medium is well-known in the molding art as an important molding parameter and the desired air flow rate would have been obviously and readily determined through routine experimentation by one having ordinary skill in the art at the time the invention was made. Further, the claimed flow rate is generally well-known in the molding art and it would have been obvious to one of ordinary skill in the art at the time the invention was made to set the flow rate of Streltsov to the claimed rate in order to efficiently heat the sheet of Streltsov. In regard to operating at the claimed static pressure range, pressure is well-known in the molding art as an important molding parameter and the desired pressure would have been obviously and readily determined through routine experimentation by one having ordinary skill in the art at the time the invention was made. Further, the claimed static pressure range is generally well-

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known in the molding art and it would have been obvious to one of ordinary skill in the art at the time the invention was made to heat the sheet of Streltsov at the claimed static pressure range in order to reduce cycle time and efficiently heat the sheet of Streltsov. In regard to extruding the sheet to the claimed thickness and creating a liner having the claimed depth, such are mere obvious matter of choice dependent on the desired final product and of little patentable consequence to the claimed process since it is not a manipulative feature or step of the claimed process. Further, the claimed thickness and depth are well-known in the molding and appliance art. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to extrude the sheet of Streltsov to have the claimed thickness and to form the liner of Streltsov to have the claimed thickness in order to form a desirable appliance liner. In regard to providing nozzles at the claimed distance from the opposing side surfaces, such is a mere obvious matter of choice dependent on equipment availability and of little patentable consequence to the claimed process since it is not a manipulative feature or step of the claimed process. Further, the claimed apparatus set up is generally well-known in the molding art. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange nozzles of Streltsov at the claimed distance in order to efficiently heat the sheet of Streltsov. In regard to sensing operating parameters of the temperature control unit, and regulating the unit based on the sensed operating parameters, such is taught by the combined teachings of Streltsov and Plante. Plante teaches the limitations as evident by fig 6. In regard to heating the sheet

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to the claimed temperature, preform temperature is well-known in the molding art as an important molding parameter and the desired temperature would have been obviously and readily determined through routine experimentation by one having ordinary skill in the art at the time the invention was made. Further, the claimed temperature is generally well-known in the molding art and it would have been obvious to one of ordinary skill in the art at the time the invention was made to heat the sheet to the claimed temperature in order to ensure thermoformability of the sheet. In regard to controlling an amount of heat added to the air by varying an operating speed of the blower unit, such is well-known in the molding and heating art. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the speed of the blowers of Streltsov (modified) in order to control the amount of heat added to the air. In regard to regulating the position of a damper unit to control an introduced amount of ambient air into the manifold assembly, such is well-known in the molding art. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to regulate the position of a damper in the process of Streltsov in order to better control the heating of the sheet of Streltsov.

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hart et al (USPN 5620715) teach a thermoforming apparatus including a conveyor mechanism, a fluid medium, a temperature control unit, a first and second manifold each having nozzles, blowers capable of variable speeds, and recirculating ducts.

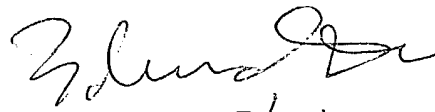
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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDMUND H. LEE whose telephone number is 571.272.1204. The examiner can normally be reached on MONDAY-THURSDAY FROM 9AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianne can be reached on 571.272.1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EDMUND H. LEE
Primary Examiner
Art Unit 1732


8/9/04

EHL